

California Garden



Christmas Number

December 1921

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The California Garden

Published Monthly by the San Diego Floral Association
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Vol. 13

POINT LOMA, CALIFORNIA, DEC., 1921

No. 6

CHRISTMAS TREES

A perennial subject for discussion in gardening and florists' papers is the matter of the thousands and tens of thousands of conifers which are cut from our mountainsides to supply the ever increasing demand for Christmas trees. The use of living trees has been advocated, not altogether from an altruistic standpoint, by florists and nurserymen and has been supported by many others who are not directly interested in their sale. The idea, however, seems to be sound, at least in the cases where smaller sizes are indicated. The trees can afterwards be planted if desired, and double value obtained.

There is a field for more enterprising persons to grow the various sorts of conifers suitable for this purpose. At the discretion of the grower, these could be grown for cutting or could be boxed and sold as live trees. There ought to be a real satisfaction for those who doing that sort of thing in that they are not only producing saleable merchandise profitably but are assisting in preventing the denudation of our forests.

It is only a question of time before we shall have to come to a different method of supplying this very legitimate demand, as the supply is not by any means inexhaustible.

ROSE STOCKS AND ROOT SYSTEMS

(By H. Harold Hume, Glen St. Mary, Florida)
(In the American Rose Annual, 1921.)

The question as to whether roses on their own roots or grafted upon some rose stock are best, is often discussed, and the end of this discussion has not yet been reached. Possibly it never will be. In such a matter, it is unwise to take the position that there is only one side to it.

When talking or writing about rose-growing in America, we some times forget that the area available covers the continent, that our soils and climate vary greatly, and that in consequence practice, varieties, and roots which give abundant satisfaction in one place may not be at all satisfactory in another. The professional, may be, and indeed are, quite unlike in different sections of the country. They are just as varied as are the local conditions.

But, looking at rose-growing in a broad way, and from the standpoint of one so located that budded or grafted roses must be used or roses not grown at all, there can be little question but that a given number of roses worked (i. e. budded or grafted) on a well-adapted vigorous stock will give more uniform satisfaction over wide areas than if the same number be grown on their own roots. Select at random, if you will, twenty-five Tea and Hybrid Tea roses on their own roots, and you will probably have twenty-five different root types or systems or develop-

ments—whatever you like to call them.

It is the common aim of everyone interested in roses to make their culture surer, easier, and simpler. Certainly if roses are to be produced under widely different soil conditions (to mention only one factor)—poor soil, rich soil, wet soil, dry soil, compact soil, open soil, or what not—and we can find stocks on which they may be grown satisfactorily and which at the same time adapt themselves to these different soil conditions, the whole problem is greatly simplified. If our root system is adapted to many different kinds of soil (with "kinds" used in its widest sense), then we have reduced those soils to a common basis by the simple expedient of growing roses on that root system.

But some may say, "Why, you can make the soil any way you want to!" Well, maybe you can and maybe you can't; it depends much upon who you are and where you live. You may be many miles from clay, and a lean pocketbook may keep you still farther removed from many of the materials entering into rose-bed receipts. If a rose stock is adapted to a large number of different rose varieties, which, if grown on their own roots, must of necessity have many different kinds of root systems, then we have made all these roses uniform in a vital part of their makeup by the process of putting them on a common

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root system. A properly adjusted stock certainly makes for uniformity, both in its relation to the soil and to the top worked upon it.

Grant that the root system of a rose is half the plant (it is not less); then one-half of all the roses grown in America, whether in nursery, park, or garden, are underground. Our effort in development has been directed largely to the upper half of the rose, to its vigor of growth, to its habit, to the blooms it bears, to the insects and fungi that attack it, and we have not given to the lower half of the rose the attention it merits. But if we are to succeed with that fullness of success which so many of us devoutly desire, then to this underground half of the rose, none of the less important because out of sight, we must give a much larger share of attention. A complete and painstaking survey of the whole problem in different parts of the country is very much needed, and necessary to a wide forward movement in open-ground rose-culture.

How may we gauge the merits of a rose stock? By the requirements which it has to meet and the way it meets them? Among the points involved the following are important:

1. It should be easily secured or propagated from seeds or cuttings.

2. It should be easily worked, i. e., budded or grafted.

3. It should be vigorous and long-lived.

4. It should be adapted to a wide range of soil conditions.

5. It should be able to grow prosperously in widely different climates.

6. It should be adapted to a large number of strains and varieties of roses.

7. It should be disease-resistant.

8. It should not sprout readily from the root or from parts of the stem below the bud or graft union.

Some discussion of these several requirements will not be out of place, for we must have a clear conception of what we want before we can secure it or know that we have it if already in hand. (It may seem strange that frequently we do not recognize the value of materials in plant work which are already in hand, as we shall presently see.)

1. There is, of course, no use in writing about growing within our own borders the quantities of roses needed in America on some stock which is difficult to propagate or which cannot be secured readily. It is a well-known fact that rose seeds of many kinds do not germinate quickly or uniformly, and it is equally well known that many sorts are difficult to root from cuttings. If the stock proposed will root easily from cuttings, the problem is simplified, because in many parts of the country the cuttings may be planted out in the field, grown for a year, and then grafted. The use of specially prepared beds, or of bottom heat, would militate against the use of any variety requiring such treatment. Some

sorts may make very fine stocks in a small way, but we are approaching the problem from the standpoint of a rose for every American yard, a dozen for every garden. Given good soil preparation and equally favorable conditions, the stock which, for instance, would give a 90 per cent stand from cuttings would be decidedly more valuable in this particular than one from which only 50 per cent of living plants could be secured.

2. Those who have propagated roses in a large way, know that not all varieties are equally easy to grow and it is also true that all stocks are not equally easy to bud or graft upon. Side by side, under the same conditions, one stock may give 50 per cent of living grafts while another will give 75 to 90 per cent. The same is equally true of budding. Some roses of possible value as stocks have very thin, brittle bark; they are consequently difficult to bud and graft, and must take second place to those more easily handled. This point and the previous one may not at first glance appeal to the ordinary rose planter, yet they both have an important bearing on quantity rose production, and upon the price which must be paid for first-class bushes.

3. Lacking vigor, a stock is worthless, and vigor and long life are very closely inter-related. Vigor means that it has the ability to overcome unfavorable conditions, to grow in spite of them. Vigor of growth is dependent upon good, deep, widespread root development with plenty of foraging power, and dependent upon foliage that can do its share with the root, in making a plant. If a rose stock under consideration is a weak grower, away with it! It must be able to take care of vigorous growing tops worked upon it; it must also be able to put life and vigor into the weak sorts entrusted to its care.

4. A rose stock should not be particular in its soil requirements. Of course we can, in a large measure, make the soil what we will, and the rose lover will go to any extreme to do so, but how much simpler it would be to do away with all that, plant the rose in any reasonable soil, and forget about any special preparations. Impossible? Be not so sure or that, at least in some parts of the country! Neither be sure of its impossibility in all parts of the country if we know more about rose stocks.

Continued on page 7

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Present Favorites and Future Prospects

Sydney B. Mitchell.
(In Bulletin of American Iris Society.)

Should I be asked to make a selection of a dozen thoroughly good, yet not so very expensive tall bearded irises it would probably include *pallida dalmatica*, still unsurpassed; *Juniata*, a taller, darker, and very graceful *pallida*; *Mandraliscae* or *Violacea grandiflora* for a darker blue; *Iris King*, all things considered, the best gold and brown; *Prosper Laugier*, a brighter squalens than *Jacquessiana* and an equally good grower; *Jeanne d'Arc*, the pest lightly fringed *plicata*; *Quaker Lady* and *Eldorado*, two free-flowering blends, particularly attractive in association; *Arch-eveque*, a rich red bi-color very given to fall as well as spring blooming in California; *Isoline*, in spite of its shy blooming and its poor summer foliage; *Caterina*, a good grower with flowers here; and, least to be omitted, the giant *Alcazar*.

Yet this list leaves out several varieties, not all new and not all very large, to which I am very fond. Perfection, for richness distinction, and free flowering, still holds its place in spite of novelties, and *Monsignor*, though it, too, is rather stiff and compact in its flower spike, is unsurpassed in its class. Two of *Farr's* seedlings, *Mount Penn*, a deep pink suffused with yellow, and *Minnehaha*, a large, deep cream with purple lines, fall far short of my ideal in height and growth yet are so distinct that I want them. For though smaller than *Iris King*, is with me a better doer and is clearer in color; *Sybil* is my favorite pink bi-color. Probably *Ann Leslie* surpasses it, but the latter has not yet flowered for me. *Goldcrest* (*Dykes*) is a good, clear-cut blue with conspicuous orange beard, but lacks height as it is a *Pallide-Ciengialti* seedling. *Corrida* (*Millet*) and *Cordon Blue* (*Sturtevant*) I should class with it for their nice, neat, but not large flowers. *Dream* (*Sturtevant*) and *Delicatissima* (*Millet*) I also think of together as they are both lovely *pallidas* of pink tone. Of the so-called red *pallidas* I am, as a rule, not fond, yet *Edouard Michael*, though not of best texture, I greatly admire for its fine size, shape and color; *Mauvine* is another tall *pallida* worth while for its unusual color even if its standards are a bit weak in substance.

Among such later novelties as I have seen I have several favorites. *Shekinah's pallida* growth and fine pale lemon-yellow coloring are all that is claimed for it and establish a new standard for yellows. *Avalon* in its combination of fine size, shape, substance and

color is not equalled and I am glad to be able to report as well that it is proving a fine grower here.

Through Mr. William Mohr of Mt. Eden, Alameda County, California, has not yet even decided if he will introduce any of his seedlings and has developed no stock of any of them, those who raise seedlings may be interested in his results as they appealed to one frequent visitor to his ranch last spring.

His earlier crosses were nearly all with a limited number of varieties. *Juniata* was the seed parent, and pollen was used from *Lohengrin*, *Her Majesty*, *Rose Unique*, *Iris King*, and *Pfaeuenaue*. *Juniata* has proved very effective in adding height as well as in giving larger flowers. He has a *Juniata Lohengrin* seedling in which the flower is almost exactly the color and shape of *Lohengrin* (*Prince Lohengrin*) but a greater advance on it not alone in larger flowers but in its open, taller stem, a great improvement over the closely packed one of the original. I saw also several as yet unsegregated pink seedlings of *Her Majesty* and *Rose Unique* colors, but with the tall stems and large flowers desired with these colors, *Juniata* crossed probably with *Iris King* has given some flowers of *Dalmarius* type but of larger size and better color. Among these seedlings was a new shade of blue, quite different from any I have in the named varieties. Two seedlings probably of *Juniata* x *Pfaeuenaue* bloomed this spring and proved very attractive, one was a blend like a larger, darker *Quaker Lady*; the other had metallic grey, the falls of the same color being irregularly blotched or flaked purple. It is quite distinct and as the flowers are well placed on the stem, they give a light, tiry effect like big butterflies.

He is, however, no longer interested in this earlier work since he acquired *Mesopotamica* and learned what it would do in increasing size and height. *Mesopotamica* is very close to the *I. Richardi* used by *Denis*, and probably to *I. cypriana*, which is one of the parents of *Caterina*. It is a huge, coarse flower on a tall, ungainly stalk, but when bred with such varieties as *Juniata*, *Oriflamme* and *Parisiana*, all of which with such varieties as *Jauniata*, *Oriflamme* and *Parisiana*, all of which have stiff, heavy stems, it has given wonderful results in big flowers of good form on erect stems, the colors mainly shades of lavender and lilac. Some of the flowers, such as (*Juniata* x *Mesopotamica*) x *Mesopotamica*

mica, are the largest I have ever seen in bearded iris, but as yet they lack the variety of color achieved by M. Denis in his Ricardi hybrids. He has also a few nice Carthusian seedlings, one a very delicate color.

Mr. Hohr has hopes of getting new colors into the tall bearded iris by a small infusion of *Oncocyclus* or *Regelia* blood. His Korolkowi x *Germanica* major is certainly a distinct new shade of blue, and in California it does well treated as a bearded iris. He has also several crosses between Korolkowi and *Mesopotamica*, but these, though tall and strong and of large flowers, are of rather dull blue greys. Crosses of *Ibmacrantha* and *Mesopotamica*, have given better results in growth, and veration, often shades of veined blue, very suggestive of the flowers of *Salpiglossia*. To me these seedlings in their tall branched growth and interesting blue-veined, flowers seemed a big advance over Sir Michel Foster's dwarfier, duller, *Oncocyclus-pogoniris* hybrids such as Lary Lilford. They are, however, merely a step, for they have been again crossed with some of the standard bearded iris to improve their constitution. It remains to be seen if the smaller amount of *Oncocyclus* blood will carry the venation and the new shades of color.

MAGAZINE NOTES

"American Forestry" for December has an excellent article on berrybearing trees and shrubs, of interest to many gardeners who appreciate this very useful class of ornamentals.

The December number of the "Garden Magazine" (Doubleday, Page & Co.) is a California number, treating of planting material and planting problems especially Californian.

Both numbers are on sale at the news stands and are on file at the San Diego Public Library.

CALIFORNIA POPPY

Thy satin vesture richer is than looms
Of Orient weave for raiment of her kings!
Not dyes of olden Tyre, not precious things
Regathered from the long-forgotten tombs
Of buried empires, not the iris plumes
That wave upon the tropics' myriad wings,
Not all proud Sheba's queenly offerings
Could match the golden marvel of thy blooms.
For thou art nurtured from the treasure-veins
Of this fair land; thy golden rootlets sup
Her sands of gold—of gold thy petals spun.
Her golden glory, thou! O hills and plains,
Lifting, exultant, every kingly cup
Brimmed with the golden vintage of the sun.
—Ina D. Coolbrith.

The speculative stocks, like the long hand of a clock, tell the minutes, but the Liberty Bond list tells the hour.

AMERICAN CHRYSANTHEMUMS TO BE EXCHANGED WITH CHINA

Two features of particular interest at the Twentieth Annual Chrysanthemum Show held by the United States Department of Agriculture at Washington, D. C., November 2-11, were the Chinese seedlings and the 50 or more varieties of Japanese chrysanthemums shown in this country for the first time. The Chinese varieties were grown from seeds purchased by the department last January. They are of the pompon or bush type, and for the most part are pale yellow-centered flat blooms, with delicately curled white or tinted petals, or like the daisy chrysanthemum, white or pink. In connection with the exhibit of Chinese seedling chrysanthemums, a system of exchange has been proposed by the University of Nanking whereby a number of interesting and promising types of American-grown plants will shortly be sent to China.

Over 50 varieties of Japanese chrysanthemums, chiefly of the pompon type, were shown here for the first time. They were brought to this country as very small plants in February, 1921. This collection represents many distinctive and unusual flowers. Even an amateur could instantly pick out the somewhat loose, sprawly heads of the Japanese chrysanthemums, with hollow petals that are very much like quills. The colors vary from white to magenta-lavender, most of the flowers showing two colors. Yellow or bronze is the prevailing tone among the Japanese varieties.

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The December Gardens

THE FLOWER GARDEN

By Mary Matthews.

December gives us some of the very best days for garden work. The mornings and late afternoons are rather cool for any irrigating so this will best be done during the warm parts of the day. Bulbs that did not go in last month should surely do so this. In planting the larger kinds of bulbs it will be found that this can be best done with the use of a trowel. Care should be taken in making the holes to see that they are of a uniform depth, so that they will all flower about the same time. See that your bulb rests firmly on the base of the hole which should be large enough to admit the bulb without crowding. With choice kinds a handful of sand around the bulb is a great help and protects it from rot. After planting has been completed it is a good idea to cover the soil with a top dressing of screened manure, —the winter rains will wash the nutriment into the soil. Never let your bulbs come into contact with the manure. Bone meal, with a sprinkling of lime can be worked through the soil before planting.

As to kinds, you can plant what you prefer. My experience has been that with the exception of tulips and hyacinths, most bulbs will grow and increase in this section if given proper care, and the South African or Cape bulbs, as they are called, do unusually well with us.

All annuals,—hardy ones,—planted now will do well, better than if planted later in the season, when working over your beds do not leave little depressions around the plants, —rather draw the soil around the crowns so they will shed water quickly, especially with large leaved plants that spread on the ground. Lift the leaves every now and then, loosen the soil and leave it rough or give it a sprinkling of lime and coarse sand. This will help keep away snails and slugs.

Starting seeds of half hardy annuals and perennials will give you many beautiful and unusual flowers if you have patience. To start right have a soil of equal parts of leaf mold, fine sand, and rich earth. Fill your flats or boxes with this soil to within an inch of the top; wet it thoroughly and let it drain before planting. Most of the seeds you will sow will be very fine and should be sown on the surface of the soil. Put a pane of glass over them and cover with a newspaper. Never let them suffer for lack of moisture, which

THE VEGETABLE GARDEN

By Walter Birch.

At this writing the weather is still hot and dry with cold chilly nights, in fact just ideal weather for things not to grow, but before this is in print we may have had a fine rain and all our garden troubles be a thing of the past. Even unfavorable weather conditions have their advantages, and on this occasion the gardener who has not done much so far to get things going for the winter and spring garden, can now get busy and probably "beat the other fellow to it", as the unfavorable weather conditions will be succeeded by moisture and good growing conditions which will probably more than make up for a late start in garden operations.

This applies to the flower garden equally with the vegetable garden, and bulbs and bedding plants that usually go in earlier will probably catch up with and overtake the ones that have been struggling along with adverse weather conditions. By the way, try working in a handful of bone meal round your bulbs, it helps wonderfully. For those who have already spaded in fertilizer with the soil it will do good to go over it again to more thoroughly mix the two together, and allow air and sunshine to penetrate.

Plant all the hardy vegetables and set out your berry plants and fruit trees as soon as you can get them. Try a root or two of Panama Rhubarb, that wonderful new introduction of J. B. Wagner, the originator of Wagner's Giant Crimson Winter. Mr. Wagner tells us the Panama is as far head of the Crimson Winter as the Crimson Winter is of the old flavorless sort. It is a tremendous producer, bears every month in the year, has much heavier stalks, takes less sugar and does not need to be peeled.

If you have any peach trees spray now with Bordeaux Mixture or lime and sulphur solution to prevent peach blight next year. December and January are also good months to prune your fruit trees. Don't be afraid to prune back severely long stragling branches that are not capable of supporting a fair crop of fruit. Picture the perfect shape of tree in your mind, and prune to bring about that result.

If you have a garage or fence, plant one or two chayotes, they make a wonderful cover and produce a large number of fruits that are much like a very delicate squash. Spade up and fertilize the piece of ground you are going to use for potatoes after the middle of January.

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THE FLOWER GARDEN

Continued from page 5

can be given with a fine spray, or if the box is small put it in a pan of water till well soaked. As soon as the seedlings have made two or three leaves, prick them off into another box. Keep shifting right along as needed; do not let them have any check until ready for permanent quarters. There are so many things that can be grown with a little care and patience. In December order your seeds for January and February planting. Catalogs offer us many new, and said to be beautiful things each year. Often we do get something new that is really fine, well worth the growing, but these are only a little adventure in the garden flowers. The old and tried ones are what we rely on for an abundance of flowers for various uses. Stocks, Asters, Snap Dragons, Corn Flowers, Pinks in sorts, Poppies, Candytuft, Sweet William, Sweet Peas, Salpiglossis, Zinnias, Marigolds, Hollyhocks, and a host of others can all be planted now, and reward you with an abundance of cut blooms if you give them rich soil, abundant moisture, frequent tilling of the ground, plenty of room to grow and spread, and when they bloom keep all seed vessels cut off. Lots of work, some will say, but there is ample compensation.

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THE "HOLLYBERRY" LAW

The Garden has had numerous requests for information regarding the recent legislation designed to protect the California Holly from destruction. We print the text of the statute below:

TOYON OR CHRISTMAS REDBERRY BILL.

Chapter 147.

An act to add a new section to the Penal Code to be numbered three hundred eighty-four a, providing for the protection of the Toyon or Christmas red-berry tree and prescribing penalties for violations of the provisions thereof:

(Approved May 14, 1921—in effect July 29, 1921.)

The people of the State of California do enact as follows:

Section 1, a new section is hereby added to the Penal Code, to be numbered three hundred eighty-four a, and to read as follows:—
384-a. Any person, firm or corporation is guilty of a misdemeanor—(a) Who mutilates or destroys any Toyon or Christmas red-berry tree (*Heteromeles arbutifolia*) growing on public or private land, unless in the case of private land, the owner gives his consent thereto; or

(b). Who sells, offers or exposes for sale any Toyon or Christmas red-berry trees (*Heteromeles arbutifolia*) or any part thereof grown on land in this state; provided, that this paragraph shall not prevent the sale of such Christmas red-berry taken from privately owned land, by or with the consent in writing of the owner of the land.

FROM GRAVEL-PIT TO ROSE-GARDEN

(Handbook American Rose Society.)

This is the heading of an editorial in the leading newspaper of London, Ontario, describing the work of a member of the American Rose Society, Mr. W. McNaughton, who has been steadily winning the highest honors for the best roses shown in a city where there is an active horticultural society with 1,600 members and which maintains exhibitions of high grade. Mr. McNaughton began operations seventeen years ago by building a fence around a small plot of ground which was a gravel-pit. He had to make the grade and make the soil. Of course, being a man of determination, he succeeded, and then five years ago began with roses.

As described, a sloping spot in the garden provides a bed which includes about a hundred roses, and these Mr. McNaughton grows to the completest perfection, succeeding even in that climate with the difficult Los Angeles, as well as with Augustus Hartman, Mme. Edouard Herriot, and similar aristocratic Hybrid Teas. Mr. McNaughton's experience and triumph ought to encourage anyone anywhere in America who wants roses to keep on trying until success comes.

THE NOVEMBER MEETING

The regular monthly meeting of the San Diego Floral Association was held at the residence of Mr. and Mrs. M. Kew, 3224 Park avenue, with good average attendance. After the reading of the minutes of the October meeting, letters were read, the first a letter from Mr. Ed. Fletcher asking the Association as a body to urge the Board of County Supervisors to support the State Board of Forestry in their work of planting trees along the State highway, the trees to be supplied and cared for by the Forestry Board, the County Supervisors to have the holes dug, also that the Floral Association make suggestions as to the proper trees to be planted in this section. The requests made in this letter have been acted upon and our President, Mr. Gorton, will by this time have sent an answer to Mr. Fletcher's letter. The second letter was from Mrs. Ommen, principal of the school at Encinitas, asking us to intercede for her with the nurserymen here in regard to furnishing suitable trees, shrubs, and flowers for planting the school grounds. Mrs. Ommen promises plenty of free advertising to any one who may assist her with material for planting. Her letter is now under consideration by the Board.

The third was a letter from the American Mothers' Congress and the Parent-Teachers' Associated, represented by Mrs. Eleanor Mannen, Vice-President, asking for sweet pea seed to be grown by the children of the 96 county schools, the bloom to be given to the guests, the members of the American Mothers' Congress, which will convene here next May. This request met with the full approval of the members who were present. Ninety-six ounces of peas have been ordered, each ounce to be in a packet with short cultural instructions and one to be sent to each of the 96 schools with the request that besides furnishing the American Mothers' with bouquets, each school will have an exhibit of sweet peas at the Annual Rose and Spring Flower Show. The Board has a project under way for launching a campaign for the El Monte Oaks proposition, this being accomplished, it will leave the Association and its Board with no unfinished business on hand at the close of the year 1921.

After this business was transacted Mr. Birch, President of the Harris Seed Co., spoke on seed growing from the commercial side, giving various items of interest, telling how during the war period the United States was drawn upon for the seed supply for all foreign countries. This created a vast industry which is still carried on. The three flowers, of which the largest quantities are grown, are Asters, Sweet Peas, and Zinnias,—of which latter there are about fifty varieties cultivated. He told how all seeds are tested be-

fore being put on the market, in fact everything pertaining to seeds, from the time they are gathered in the fields, until they are in the hands of the gardeners and the amateur growers.

Planting, and transplanting, and the growing of seeds in various ways were then discussed by those present.

After a talk on the growing of the Dahlia *Imperialis*, "The Tree Dahlia", a fine specimen of which was brought by Mr. Lawrence, the meeting adjourned with an expression of thanks to Mr. and Mrs. Kew, for the use of their home.

MARY A. MATTHEWS,
Secretary.

ROSE STOCKS AND ROSE SYSTEMS

Continued from page 2

With some kinds of roses, "always in growth is always in bloom" it is true, and such a condition is quite possible in some parts of our country. The right stock will help greatly in keeping up growth and bloom. So far as known we have no alkali-resistant rose stock. The finding of such a stock would be worth while.

5. Glance at the rose-zone map published in the 1920 Rose Annual. It is very instructive. While it deals with varieties it has equal force as applied to stocks. The problem would be greatly simplified from the standpoint of the rose propagator if one stock would do equally well in all sections. But this is hardly to be expected, and it may be necessary to work out stocks for each rose zone, although the adaptability of roses to different climates is remarkable. In passing, it may be pointed out that there is no basic difference in hardiness in a variety grown on the same stock, regardless of where it may be grown. A Frau Karl Druschki rose on Manetti stock is not different in hardiness whether it be grown in California, New Jersey, Ohio, or Florida. (There is probably not much to be gained by using a stock more hardy, i. e. more dormant or less affected by heat impact, than the top worked upon it, but the stock should at least be as hardy as the top.)

6. If Hybrid Perpetuals had to be grown on one stock, Hybrid Teas on another, and so on, a very complicated situation would be created for the large grower of grafted roses. A rose stock adapted to many kinds of roses has decided advantages.

7. In growing thrifty rose stocks, disease-resistance is important. Freedom from rose spot and other fungous diseases is a very desirable item. Again, in the lower South, where on lighter soils root nematodes are very common, a rose stock very susceptible

(To be Continued)

PLANT IMMIGRANTS

By G. R. Gorton.

Among the comparatively recent importations by the U. S. Bureau of Foreign Seed and Plant Introduction are a number of quite promising ornamentals and fruits which may prove to be valuable additions to the wide range of planting material already offered in the favored lands of California.

A red flowered *Leptospermum* (*L. scoparium nichollii*) from New Zealand is a departure from the ordinary species or two with which we are familiar. This red species is described as "the beautiful counterpart of the English broom or gorse, sometimes 30 feet in height." The entire plant, leaves, flowers, fruit, and young shoots are said to be very aromatic and it is thought that a use might be found for the oil which it contains. The natives in the country of its habitat utilize the wood for paddles and spears, fences and firewood. The twigs, arranged in suitable bunches are used for brooms.

A *Metrosideros* (*M. tomentosa*), also from New Zealand, is said to be very resistant to ocean winds or even salt spray. The flowers are of a crimson hue, and the tree, which is said to be quite spreading in habit, is described as "very ornamental."

Acacia pollens from the Transvaal is there considered to be one of the most valuable timber trees. It attains a height of about 30 feet, and the wood which is very hard and heavy, and durable underground is used for mine props. Because of the very conspicuous "warts" on the trunk and principal branches it has been dubbed "knopjesdoorn".

The department is constantly importing types, varieties and species of *Cherimoyas*, and already a number of these are proving to be adapted to California conditions. One of these recently introduced is a type known in Mexico as the *Llama* or *Papauce*. Although a tropical cherimoya, it has not succeeded well in Florida, and it is thought that it could be grown to better advantage in California under the more typically subtropical conditions.

A happy combination of food plant and ornamental is a purple *Dolichos* (*D. jacquinii*), from Uruguay, but indigenous to the West Indies. Propagated readily from seed, it is said to be sufficiently hardy for California and produces quantities of bright purple flowers. In India the pods are used as a food, being eaten as are our ordinary kidney beans.

A tree also combining useful and ornamental qualities hails from the same district (Montevideo) of Uruguay. Really a Brazilian tree, it is said to be of very regular habit and forms a dense crown. When covered with the characteristic white flowers it is said to be a striking ornamental. The bark and wood are cut into chips and are sold thus, and from them are extracted certain salt and mucilage constituents utilized in saponification of greasy substances. A dwarf type of

Grevillea (*G. lavendulacea*) has been brought from South Australia. This species does not attain more than a foot or eighteen inches in height and prefers rocky soil. Indications are that it would make a satisfactory rock plant for California rock gardens.



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Keep It In Mind--
THE BULB SHOW

Patronize the Garden Advertisers.

JAPANESE CHRYSANTHEMUMS CONSPICUOUS AT SHOW

Nearly 60,000 Visit Twentieth Annual 'Mum Show Made by Department of Agriculture at Washington

Marked Progress in the Production and Growing of Seedlings for Greenhouse and Outdoor Culture—A Popular Late-Blooming Flower for the Hardy Garden.

A number of promising and unusual chrysanthemum seedlings were exhibited for the first time at the Twentieth Annual Chrysanthemum Show held by the United States Department of Agriculture, November 2 to 11, in the department greenhouse. Several of those with large blooms grown with one flower on a tall stalk were named by Mrs. Wallace during the show. "Mrs. Harding" was a deep lavender bloom, while "Secretary Wallace" was bronze, red and yellow. "Mrs. Henry C. Wallace" was named by the secretary from this year's seedlings, a conspicuous dark lavender with purple-backed petals. "Titian Tints" was an exquisite small bush or pompon type named by Mrs. Wallace, and "Josephine Wallace" was a bronze yellow pompon of delicate formation.

Characteristics of Japanese Varieties.

Outstanding among the 50 or more varieties of Japanese chrysanthemums which were grown from very small plants imported last February, was "Skikishima," a large flattish head of pale lavender on a well-developed bush. Although the Japanese prefer to grow their chrysanthemums to get the effect of the entire bush, this plant especially seems to offer possibilities for development in the American single-stalk fashion.

Many of the Japanese flowers, with their characteristic quill-like petals, sprawly heads, and loose arrangement on the bush, are yellow in tone, though two colors are usual. "Kaka-no-sui" has magenta petals with a pinkish-white reverse side. "Kabatama" is reddish yellow. "Matsu-no-tsuru" shades from pale pink to yellow white. "Hatsuhinode" has large loose yellow petals.

The Chinese seedlings shown in considerable number were white, white and lavender, white and pale yellow, yellow, and delicately pink. Most of them had flat petals curling toward a distinctly defined center; some were of the daisy type, both white and lavender-pink, with yellow centers. They were easily distinguishable from the Japanese plants. These Chinese seedlings were all grown from seeds bought in January, 1921. Of interest in connection with the exhibit of Chinese seedlings is a request from the University of Nanking for the exchange of some domestic chrysanthemum plants with China. After the department has selected the stock it desires to use for another year, including certain plants which will be tested out-of-doors at the Arlington Experimental Farm, near Washington, suitable and representative stock will

be sent to China.

Hardy Types to Be Tested Out of Doors.

The chrysanthemums exhibited by the department are, of course, raised in greenhouses. The future of the interesting Japanese varieties cannot be foretold. In developing plants for hardiness it will be necessary to select the earlier blooming varieties which will mature before the short northern summer is over. Garden chrysanthemums have long been popular and suitable for home growing in the latitude of Washington, D. C., and further south, but there are very few varieties that will resist the dry cold of the northeastern and middle-western states. Out of 11,000 plants that have been tested within the past five years only about 65 varieties still offer possibilities as sufficiently early and hardy. These are chiefly of the smaller garden type of bush or pompon chrysanthemums.

Among the tall single-stalk plants which attracted attention at the show there were two varieties named for General Pershing, one of which was English; and "Vermont," a large pale pinkish lavender. "Josephine Byrnes," while not new this year, held a place of distinction with its dahlia-red blooms among the yellow and white bush plants on the side tables.

The records show that 59,182 persons visited the chrysanthemum show this year. Last year there were about 40,000 visitors.

PROPOSED QUARANTINE AGAINST SATIN MOTH

Washington, D. C., November 30.—The advisability of quarantining the States of New Hampshire and Massachusetts to check the spread of the satin moth, a dangerous insect pest newly discovered in this country, will be considered at a public hearing to be held by the Floral Horticultural Board, United States Department of Agriculture, here December 13. Any person interested in the proposed action by the board may appear and be heard either in person or by attorney.

Quarantine action, if decided upon, would prohibit or restrict the movement of the insect's principal carriers, poplar, willow, and related plants, from these States, or from any districts in them found to be infested with the pest, into other States and Territories.

The satin moth, so-called from its white, satin-like appearance, occurs throughout Europe, and is particularly an enemy of poplar and willow. It was first reported in this country about July 1, 1920, in the Fellsway district north of Boston, but from its distribution and abundance, as later determined, it is thought that it then had undoubtedly been in the United States for several years. It has not been possible to determine the source of its introduction, but the department thinks it probable that the insect was brought in with some importations of willows or poplars.

The insect hibernates as small larvae, webbed over and concealed in crevices of the bark, and are so hidden and inconspicuous as often to escape even the most careful inspection.

While this pest is looked upon as not of prime importance, it is a very serious enemy of the plants it attacks, and the prevention of its further distribution in the United States is highly desirable. Should quarantine action be decided upon, the control of interstate movement of its possible carriers can easily be taken care of in connection with the general moth quarantine against the gipsy and brown-tail moths now being enforced by the department, in co-operation with the States concerned, over and far beyond the area now reached by the new pest.

The present known distribution of the satin moth covers a considerable area extending from Boston into southeastern New Hampshire and involves some 63 towns in Massachusetts and 7 in New Hampshire. It is proposed that any quarantine restrictions shall be limited to the areas within these States actually determined from time to time to be infested. The inclusion of these States, therefore, as a whole for the purpose of the forthcoming hearing is merely to make it possible in the future to add any new areas without the delay and publicity attending a formal notice of hearing.

Following is the text of the formal notice of the hearing as signed by the Secretary of Agriculture and issued by the board:

"Washington, D. C., Nov. 8, 1921.

"Notice of Public Hearing To Consider the Advisability of Quarantining the States of New Hampshire and Massachusetts on Account of the Satin Moth.

"The Secretary of Agriculture has information that the satin moth, (*Stilpnotia salicis* L.), a dangerous insect not heretofore widely prevalent or distributed within and throughout the United States, exists in portions of the States of New Hampshire and Massachusetts.

"It appears necessary, therefore, to consider the advisability of quarantining the States of New Hampshire and Massachusetts in accordance with the Plant Quarantine Act of August 20, 1912, (37 Stat., 315) as amended by the Act of Congress approved March 4, 1917, (39 Stat., 1134, 1165), prohibiting or restricting the movement from these States, or from any infested districts determined therein, into other States and Territories of poplar, willow, and related plants.

"Notice is, therefore, hereby given that public hearing will be held at the U. S. Department of Agriculture, Washington, D. C., Room 11, Federal Horticultural Board, at 10 a. m., December 13, 1921 in order that any person interested in the proposed quarantine may appear and be heard either in person or by attorney."

Learn and Teach Exhibit at the **BULB SHOW** and at the **SPRING** Flower Show

BLUE FLOWERS

Many are rather at a loss to think of suitable blue-flowering plants, Lobelia and Ageratum being the limit of imagination in the case of the "summer bedder." Blue Nemesis is a fine thing, and the annual Larkspurs will give a wide range of blue. So, too, do the Lupins, many fine and distinct shades being now available. Salvia patens cannot be excelled for intensity of color; the azure Sage is almost equally good. S. Bluebeard has a pleasing shade of purplish-blue, while Nemophilas and other annuals might be pressed into service. The majority of the flowers mentioned will bloom in the same year that seeds are sown, and none of them call for special cultivation. The most charming of all is Phacelia campanularia, an annual which, however, appears to attract every slug in the garden, with the result that, unless sown in frames and transplanted, it is perhaps the least satisfactory of all.—Kirk in Gardening Illustrated, London.

Spraying and Pruning

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E. L. KILEY

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Phone 657-14 before 7 a.m. or after 8 p.m.



BOYS' AND GIRLS' PAGE



TESTING SPROUTING ABILITY OF SEEDS

The Supplying of Warmth, Moisture and Air All That Is Necessary to Test Viability of Seeds—The "Blotting Paper Test," "Water Tumbler Test," "Rag Doll Test," and Coil Tests.

(Written for the United States School Garden Army.)

It is a simple matter to test this sprouting ability of seeds by furnishing them with warmth, moisture and air. Air is everywhere, so practically we need to provide only moisture and warmth.

Here are some sample ways of testing the viability of sprouting qualities of seeds:

1. Fill a water tumbler, a cup, or a bowl half full of clean moist sand. Place on top of the sand 10 or more seeds. Place over the top of the tumbler a small pane of glass or a saucer.

2. Pour a little water into a soup plate or pie pan. Set a flower-pot saucer right side up in the water. Place 10 or more seeds in the saucer. Cover the saucer by inverting over it another flower-pot saucer, preferably slightly smaller. Keep in a warm room.

3. Cut three or more pieces of blotting paper or heavy carpet paper so they will lay flat in a pie plate, a soup plate, or some similar dish. Place 10 or more seeds between each two layers of paper. Add enough water to moisten the paper, and either cover the receptacle or else add more water to keep the paper moist. Keep in a warm room.

4. Plant the seeds in soil in a paper flower pot, an earthen flower pot, or a window box. Keep the soil moist and warm.

In each case the seed should germinate in a few days. After the root sprout is well developed examine the seeds to see the baby plant and the wrapper that incloses it.

This seed testing offers excellent opportunities for problems in percentage of viability.

It is especially important to test seeds that have been held over from previous years. It is worth while, however, to have pupils test samples of all seeds.

The "rag-doll test."—Sterilize a piece of muslin (8 by 16 inches is a convenient size) and a fruit jar with hot water. Lay the cloth flat on a clean table. Count out 50 or 100 seeds of the lot you wish to test. Roll them into the cloth until they are covered. Add another set from another lot and roll. Continue

until all samples of all the lots of seeds are inclosed. Fold the ends of the roll toward the center; place in the jar. Add a small amount of water to keep the rag moist. Perforate the top of the jar and screw it on. Place in a warm place. Keep a record of the date. In a few days enroll the doll carefully and examine the seeds. If the germination process is not far enough along, return it to the jar. Note carefully the germination power of the seeds from time to time. Good seeds germinate equally, quickly, vigorously. Discard seeds which show signs of low vitality.

It is true that plump, bright, large seeds may be full of vitality, yet, without the test, there is a large possibility for crop failure.

Letters From School Children

(Furnished by Department of Agriculture, San Diego Schools)

Loma Portal School,
San Diego, Cal., Nov. 10, 1921.

Mr. G. R. Gorton,
San Diego, Cal.

Dear Mr. Gorton:

We believe that you will be interested to hear what we, the children of the Loma Portal School, are doing in agriculture.

Our garden is fifty by seventy feet. In it we have planted beans, peas, cauliflower, carrots, onions, garlic, turnips, lettuce, nasturtiums, other flowers and strawberries.

We have a large yard, here we have many young vines, lilacs, small trees, bushes and flowers.

We expect to plant some oak trees, holly-berry bushes, more vegetables and flowers.

Agriculture is one of our greatest pleasures in school work. We are trying to make our garden and yard more attractive by cultivating, planting, watering and weeding the flowers and vegetables.

We have eighteen dollars saved in the bank from last year's garden money. We expect to earn more this year.

Yours truly,
LOMA PORTAL SCHOOL.

MY BEST HOME GARDEN

By Louise Tenoris, Sherman School, 5A

I had a little garden at my home. My garden was nine by nine feet. I planted some carrots, beets, lettuce and other little things

The California Garden

G. R. Gorton, Editor
Office, Court House, San Diego, Cal.

PUBLISHED MONTHLY BY

The San Diego Floral Association

Main Office, Point Loma, California

OFFICERS AND DIRECTORS

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Entered as second-class matter December 8, 1910, at the Post office at Point Loma, California, under the Act of March 3, 1879.

California Garden is on the list of publications authorized by the San Diego Retail Merchants Association.

Subscription, \$1.00 per year

Elite Printing Co., 945 7th St., San Diego

and if you could see it you would call it a beautiful garden, for I planted it for beauty, too. I put my corn on the outside to fence it and the little things inside. I watered the things and treated my garden very nice. I treated it as I would treat my pet dog. Then I got fine things out of it. So treat your garden nice and you will succeed with it.

OUR SCHOOL GARDEN

Mildred Barton, Sherman School, 5B.

We Sherman school children are very proud of our garden. When the time comes to go to the garden we are all anxious to go and work in it. We have planted in our garden vegetables such as beets, beans, radishes, peas, lettuce, cabbage, carrots, onions and turnips. It is very interesting to go to the garden and see the plants grow. Sometimes our Agriculture teacher takes the children and pick radishes and other vegetables to let them sell.

We also study about animals found in our garden. I think that every child should raise a small garden for himself.

MY HOME GARDEN

Olin McMorro, Sherman School, 5A

Have you a garden? Every boy and girl should have one. Maybe you have no room. Ask your father or mother if you can have a little space. Five feet square will do. I have now a space twenty feet square. A long time ago I had a little space about eight feet square. First I planted some beets, carrots and radishes. When they were big enough to eat I sold them to my friends. After a while I had carrots, beets, radishes, potatoes, tomatoes, beans and onions. Now I have made enough to rent some land. I wish every boy and girl in the world could have a garden. Save up your money to buy seeds to plant in your garden.

—BUY W. S. S.—

Floral Association Meetings

Semi-annual meeting, January 17, 1922,
8 p. m.

Place of meeting—Gray, Maw Music Co.,
1256 Fifth street.

Subject—The Camera and the Garden.

THEIR LAST QUARREL

By Myrtle, Sherman School, 5B.

Once upon a time there were two friends. One was Miss Carrot and the other was Miss Tomato. These friends very often had quarrels. This is one of them:

Miss Tomato said to Miss Carrot, "I am lots better to eat than you". "Well," said Miss Carrot, "wait and see if Mrs. Polly, the owner of the garden in which we live, picks you or me first."

The next day Mrs. Polly came out and heard the conversation going on between Miss Tomato and Miss Carrot. She told them that she liked Miss Tomato and her husband liked Miss Carrot best. That was the last of Miss Carrot and Miss Tomato!

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